

SEQUENCE LISTING

<110> BERDEL, Wolfgang E.
MESTERS, Rolf M.

<120> Fusion polypeptides for antivasular tumor therapy

<130> 20490.003

<150> PCT/EP04/009364

<151> 2004-08-20

<150> DE 10338733.1

<151> 2003-08-22

<160> 41

<170> PatentIn version 3.1

<210> 1

<211> 263

<212> PRT

<213> Homo sapiens

<220>

<221> Amino acid sequence of human TF

<400> 1

Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
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Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
20 25 30

Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
35 40 45

Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
50 55 60

Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
65 70 75 80

Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
85 90 95

Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
100 105 110

Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
115 120 125

Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
 130 135 140
 Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
 145 150 155 160
 Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
 165 170 175
 Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
 180 185 190
 Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu
 195 200 205
 Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Glu Ile Phe Tyr Ile Ile
 210 215 220
 Gly Ala Val Val Phe Val Val Ile Ile Leu Val Ile Ile Leu Ala Ile
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 Ser Leu His Lys Cys Arg Lys Ala Gly Val Gly Gln Ser Trp Lys Glu
 245 250 255
 Asn Ser Pro Leu Asn Val Ser
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<210> 2
 <211> 218
 <212> PRT
 <213> Homo sapiens

<220>
 <221> Amino acid sequence of tTF1-218

<400> 2
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 Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30
 Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45
 Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60
 Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80
 Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
 85 90 95

Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
 100 105 110
 Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
 115 120 125
 Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
 130 135 140
 Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
 145 150 155 160
 Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
 165 170 175
 Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
 180 185 190
 Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu
 195 200 205
 Cys Met Gly Gln Glu Lys Gly Glu Phe Arg
 210 215

<210> 3
 <211> 224
 <212> PRT
 <213> Artificial

<220>
 <221> Amino acid sequence of tTF-GRGDSP
 <223> Synthetic construct

<400> 3
 Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
 1 5 10 15
 Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30
 Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45
 Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60
 Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80
 Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
 85 90 95
 Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
 100 105 110

Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
 115 120 125
 Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
 130 135 140
 Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
 145 150 155 160
 Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
 165 170 175
 Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
 180 185 190
 Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu
 195 200 205
 Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Gly Arg Gly Asp Ser Asp
 210 215 220

<210> 4

<211> 225

<212> PRT

<213> Artificial

<220>

<221> Amino acid sequence of tTF-GNGRAHA

<223> Synthetic construct

<400> 4

Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
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 Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30
 Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45
 Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60
 Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80
 Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
 85 90 95
 Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
 100 105 110
 Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
 115 120 125

Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
 130 135 140
 Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
 145 150 155 160
 Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
 165 170 175
 Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
 180 185 190
 Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu
 195 200 205
 Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Gly Asn Gly Arg Ala His
 210 215 220
 Ala
 225

<210> 5
 <211> 228
 <212> PRT
 <213> Artificial

<220>
 <221> Amino acid sequence of tTF-GALNGRSHAG
 <223> Synthetic construct

<400> 5
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 1 5 10 15
 Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30
 Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45
 Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60
 Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80
 Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
 85 90 95
 Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr
 100 105 110

Ile Gln Ser Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu
 115 120 125
 Asp Glu Arg Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg
 130 135 140
 Asp Val Phe Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser
 145 150 155 160
 Ser Ser Ser Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu
 165 170 175
 Ile Asp Val Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val
 180 185 190
 Ile Pro Ser Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu
 195 200 205
 Cys Met Gly Gln Glu Lys Gly Glu Phe Arg Gly Ala Leu Asn Gly Arg
 210 215 220
 Ser His Ala Gly
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<210> 6
 <211> 225
 <212> PRT
 <213> Artificial
 <220>
 <221> Amino acid sequence of tTF-GCNGRCG
 <223> Synthetic construct

<400> 6
 Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
 1 5 10 15
 Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30
 Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45
 Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60
 Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80
 Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn
 85 90 95
 Ser Pro Glu Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr

100					105					110					
Ile	Gln	Ser	Phe	Glu	Gln	Val	Gly	Thr	Lys	Val	Asn	Val	Thr	Val	Glu
		115					120					125			
Asp	Glu	Arg	Thr	Leu	Val	Arg	Arg	Asn	Asn	Thr	Phe	Leu	Ser	Leu	Arg
	130					135					140				
Asp	Val	Phe	Gly	Lys	Asp	Leu	Ile	Tyr	Thr	Leu	Tyr	Tyr	Trp	Lys	Ser
	145					150					155				160
Ser	Ser	Ser	Gly	Lys	Lys	Thr	Ala	Lys	Thr	Asn	Thr	Asn	Glu	Phe	Leu
				165					170					175	
Ile	Asp	Val	Asp	Lys	Gly	Glu	Asn	Tyr	Cys	Phe	Ser	Val	Gln	Ala	Val
			180					185					190		
Ile	Pro	Ser	Arg	Thr	Val	Asn	Arg	Lys	Ser	Thr	Asp	Ser	Pro	Val	Glu
		195					200					205			
Cys	Met	Gly	Gln	Glu	Lys	Gly	Glu	Phe	Arg	Gly	Cys	Asn	Gly	Arg	Cys
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225															

<210> 7
 <211> 232
 <212> PRT
 <213> Artificial

<220>
 <221> Amino acid sequence of tTF-GCNGRCVSGCAGRC
 <223> Synthetic construct

<400> 7
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 Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30
 Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45
 Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60
 Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala
 65 70 75 80
 Gly Asn Val Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn

85					90					95					
Ser	Pro	Glu	Phe	Thr	Pro	Tyr	Leu	Glu	Thr	Asn	Leu	Gly	Gln	Pro	Thr
			100					105					110		
Ile	Gln	Ser	Phe	Glu	Gln	Val	Gly	Thr	Lys	Val	Asn	Val	Thr	Val	Glu
		115					120					125			
Asp	Glu	Arg	Thr	Leu	Val	Arg	Arg	Asn	Asn	Thr	Phe	Leu	Ser	Leu	Arg
		130					135					140			
Asp	Val	Phe	Gly	Lys	Asp	Leu	Ile	Tyr	Thr	Leu	Tyr	Tyr	Trp	Lys	Ser
							150					155			160
Ser	Ser	Ser	Gly	Lys	Lys	Thr	Ala	Lys	Thr	Asn	Thr	Asn	Glu	Phe	Leu
				165					170					175	
Ile	Asp	Val	Asp	Lys	Gly	Glu	Asn	Tyr	Cys	Phe	Ser	Val	Gln	Ala	Val
			180					185					190		
Ile	Pro	Ser	Arg	Thr	Val	Asn	Arg	Lys	Ser	Thr	Asp	Ser	Pro	Val	Glu
			195				200					205			
Cys	Met	Gly	Gln	Glu	Lys	Gly	Glu	Phe	Arg	Gly	Cys	Asn	Gly	Arg	Cys
		210					215					220			
Val	Ser	Gly	Cys	Ala	Gly	Arg	Cys								
		225					230								

<210> 8
 <211> 228
 <212> PRT
 <213> Artificial

<220>
 <221> Amino acid sequence of tTF-GCVLNGRMEC
 <223> Synthetic construct

<400> 8
 Ser Gly Thr Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser
 1 5 10 15
 Thr Asn Phe Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln
 20 25 30
 Val Tyr Thr Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys
 35 40 45
 Cys Phe Tyr Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val
 50 55 60
 Lys Asp Val Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala

65		70		75		80
Gly Asn Val	Glu Ser Thr	Gly Ser Ala	Gly Glu Pro	Leu Tyr Glu	Asn	
	85		90		95	
Ser Pro Glu	Phe Thr Pro	Tyr Leu Glu	Thr Asn Leu	Gly Gln Pro	Thr	
	100		105		110	
Ile Gln Ser	Phe Glu Gln	Val Gly Thr	Lys Val Asn	Val Thr Val	Glu	
	115		120		125	
Asp Glu Arg	Thr Leu Val	Arg Arg Asn	Asn Thr Phe	Leu Ser Leu	Arg	
	130		135		140	
Asp Val Phe	Gly Lys Asp	Leu Ile Tyr	Thr Leu Tyr	Tyr Trp Lys	Ser	
	145		150		155	160
Ser Ser Ser	Gly Lys Lys	Thr Ala Lys	Thr Asn Thr	Asn Glu Phe	Leu	
	165		170		175	
Ile Asp Val	Asp Lys Gly	Glu Asn Tyr	Cys Phe Ser	Val Gln Ala	Val	
	180		185		190	
Ile Pro Ser	Arg Thr Val	Asn Arg Lys	Ser Thr Asp	Ser Pro Val	Glu	
	195		200		205	
Cys Met Gly	Gln Glu Lys	Gly Glu Phe	Arg Gly Cys	Val Leu Asn	Gly	
	210		215		220	
Arg Met Glu	Cys					
225						

<210> 9
 <211> 654
 <212> DNA
 <213> Artifical

<220>
 <221> Nucleotide sequence of tTF1-218
 <223> Synthetic construct

<400> 9	
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acaatttttg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact	120
aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc	180
gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctcttctc ctaccgggca	240
gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc	300

acaccttacc	tgagacaaa	cctcggacag	ccaacaattc	agagttttga	acaggtggga	360
acaaaagtga	atgtgaccgt	agaagatgaa	cggacttttag	tcagaaggaa	caacactttc	420
ctaagcctcc	gggatgtttt	tggaaggac	ttaatttata	cactttatta	ttggaaatct	480
tcaagttcag	gaaagaaaac	agccaaaaca	aacactaatg	agtttttgat	tgatgtggat	540
aaaggagaaa	actactgttt	cagtgttcaa	gcagtgattc	cctcccgaac	agttaaccgg	600
aagagtacag	acagcccggg	agagtgtatg	ggccaggaga	aaggggaatt	caga	654

<210> 10
 <211> 672
 <212> DNA
 <213> Artificial

<220>
 <221> Nucleotide sequence of tTF-GRGDSP
 <223> Synthetic construct

<400> 10	
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ggcagcatat	aatttaactt
ggaaatcaac	taatttcaag
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acaatttttg	agtgggaacc
caaaccgctc	aatcaagtct
acactgttca	aataagcact
	120
aagtcaggag	attggaaaag
caaatgcttt	tacacaacag
acacagagtg	tgacctcacc
	180
gacgagattg	tgaaggatgt
gaagcagacg	tacttggcac
gggtcttctc	ctaccggca
	240
gggaatgtgg	agagcaccgg
ttctgctggg	gagcctctgt
atgagaactc	cccagagttc
	300
acaccttacc	tgagacaaa
cctcggacag	ccaacaattc
agagttttga	acaggtggga
	360
acaaaagtga	atgtgaccgt
agaagatgaa	cggacttttag
tcagaaggaa	caacactttc
	420
ctaagcctcc	gggatgtttt
tggaaggac	ttaatttata
cactttatta	ttggaaatct
	480
tcaagttcag	gaaagaaaac
agccaaaaca	aacactaatg
agtttttgat	tgatgtggat
	540
aaaggagaaa	actactgttt
cagtgttcaa	gcagtgattc
cctcccgaac	agttaaccgg
	600
aagagtacag	acagcccggg
agagtgtatg	ggccaggaga
aaggggaatt	cagaggaaga
	660
ggtgattctc	ca
	672

<210> 11
 <211> 675
 <212> DNA
 <213> Artificial

<220>

<221> Nucleotide sequence of tTF-GNGRAHA

<223> Synthetic construct

<400> 11

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aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc      180
gacgagattg tgaaggatgt gaagcagacg tacttggcac ggtcttctc ctaccggca      240
gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc      300
acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga      360
acaaaagtga atgtgaccgt agaagatgaa cggactttag tcagaaggaa caacactttc      420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct      480
tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat      540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg      600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagaggtaac      660
ggaagagcac atgca .                                         675
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<210> 12

<211> 684

<212> DNA

<213> Artificial

<220>

<221> Nucleotide sequence of tTF-GALNGRSHAG

<223> Synthetic construct

<400> 12

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acaatttttg agtgggaacc caaaccgctc aatcaagtct aactgttca aataagcact      120
aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc      180
gacgagattg tgaaggatgt gaagcagacg tacttggcac ggtcttctc ctaccggca      240
gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc      300
acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga      360
acaaaagtga atgtgaccgt agaagatgaa cggactttag tcagaaggaa caacactttc      420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct      480
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tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat	540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg	600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagagggtgc	660
ttaaatggaa gatctcacgc tggt	684

<210> 13
 <211> 675
 <212> DNA
 <213> Artificial

<220>
 <221> Nucleotide sequence of tTF-GCNGRCG
 <223> Synthetic construct

<400> 13	
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acaatttttg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact	120
aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc	180
gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctcttctc ctaccggca	240
gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc	300
acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga	360
acaaaagtga atgtgaccgt agaagatgaa cggactttag tcagaaggaa caacactttc	420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct	480
tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat	540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg	600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagagggtgc	660
aacggtagat gtggt	675

<210> 14
 <211> 696
 <212> DNA
 <213> Artificial

<220>
 <221> Nucleotide sequence of tTF-GCNGRCVSGCAGRC
 <223> Synthetic construct

<400> 14

tcaggcacta caaatactgt ggcagcatat aatttaactt ggaaatcaac taatttcaag	60
acaatttttg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact	120
aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc	180
gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctcttctc ctaccggca	240
gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc	300
acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga	360
acaaaagtga atgtgaccgt agaagatgaa cggactttag tcagaaggaa caacactttc	420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct	480
tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat	540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg	600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagaggttgt	660
aatggaagat gtgtttctgg atgtgcagga cgatgt	696

<210> 15
 <211> 684
 <212> DNA
 <213> Artificial

<220>
 <221> Nucleotide sequence of tTF-GCVLNGRMEC
 <223> Synthetic construct

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acaatttttg agtgggaacc caaaccgctc aatcaagtct acactgttca aataagcact	120
aagtcaggag attggaaaag caaatgcttt tacacaacag acacagagtg tgacctcacc	180
gacgagattg tgaaggatgt gaagcagacg tacttggcac gggctcttctc ctaccggca	240
gggaatgtgg agagcaccgg ttctgctggg gagcctctgt atgagaactc cccagagttc	300
acaccttacc tggagacaaa cctcggacag ccaacaattc agagttttga acaggtggga	360
acaaaagtga atgtgaccgt agaagatgaa cggactttag tcagaaggaa caacactttc	420
ctaagcctcc gggatgtttt tggcaaggac ttaatttata cactttatta ttggaaatct	480
tcaagttcag gaaagaaaac agccaaaaca aacactaatg agtttttgat tgatgtggat	540
aaaggagaaa actactgttt cagtgttcaa gcagtgattc cctcccgaac agttaaccgg	600
aagagtacag acagcccggg agagtgtatg ggccaggaga aaggggaatt cagaggatgc	660

gtctttaaagt gtaggatgga atgc 684

<210> 16
<211> 45
<212> DNA
<213> Artificial

<220>
<221> 5' Oligonucleotide primer for the preparation of tTF1-218
<223> Synthetic construct

<400> 16
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<210> 17
<211> 40
<212> DNA
<213> Artificial

<220>
<221> 3' Oligonucleotide primer for the preparation of tTF1-218
<223> Synthetic construct

<400> 17
cgggatccta ttatctgaat tcccctttct cctggcccat 40

<210> 18
<211> 45
<212> DNA
<213> Artificial

<220>
<221> 5' Oligonucleotide primer for the preparation of tTF-GRGDSP
<223> Synthetic construct

<400> 18
catgccatgg gatcaggcac tacaaatact gtggcagcat ataat 45

<210> 19
<211> 43
<212> DNA
<213> Artificial

<220>
<221> 3' Oligonucleotide primer for the preparation of tTF-GRGDSP
<223> Synthetic construct

<400> 19
cgggatccta ttatggagaa tcacctcttc ctctgaattc ccc 43

<210> 20
 <211> 45
 <212> DNA
 <213> Artificial

 <220>
 <221> 5' Oligonucleotide primer for the preparation of tTF-GNGRAHA
 <223> Synthetic construct

 <400> 20
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<210> 21
 <211> 46
 <212> DNA
 <213> Artificial

 <220>
 <221> 3' Oligonucleotide primer for the preparation of tTF-GNGRAHA
 <223> Synthetic construct

 <400> 21
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<210> 22
 <211> 45
 <212> DNA
 <213> Artificial

 <220>
 <221> 5' Oligonucleotide primer for the preparation of tTF-GCNGRCG
 <223> Synthetic construct

 <400> 22
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<210> 23
 <211> 46
 <212> DNA
 <213> Artificial

 <220>
 <221> 3' Oligonucleotide primer for the preparation of tTF-GCNGRCG
 <223> Synthetic construct

 <400> 23
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<210> 24
 <211> 45
 <212> DNA
 <213> Artificial

 <220>
 <221> 5' Oligonucleotide primer for the preparation of tTF-GCNGRCVSGCAGRC
 <223> Synthetic construct

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 <211> 67
 <212> DNA
 <213> Artificial

 <220>
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 <223> Synthetic construct

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 attcccc 67

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 <212> DNA
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 <221> 5' Oligonucleotide primer for the preparation of tTF-GCVLNGRMEC
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 <211> 55
 <212> DNA
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 <223> Synthetic construct

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<210> 28
 <211> 45
 <212> DNA
 <213> Artificial

<220>
 <221> 5' Oligonucleotide primer for the preparation of tTF-GALNGRSHAG
 <223> Synthetic construct

<400> 28
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<210> 29
 <211> 55
 <212> DNA
 <213> Artificial

<220>
 <221> 3' Oligonucleotide primer for the preparation of tTF-GALNGRSHAG
 <223> Synthetic construct

<400> 29
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<210> 30
 <211> 45
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 <221> Amino acid sequence of the affinity-tag
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 His His His His His His Ser Ser Gly Leu Val Pro Arg Gly Ser Gly
 1 5 10 15
 Met Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
 20 25 30
 Pro Asp Leu Gly Thr Asp Asp Asp Asp Lys Ala Met Gly
 35 40 45

<210> 31
 <211> 269
 <212> PRT

<213> Artificial

<220>

<221> Amino acid sequence of tTF-GRGDSP having an N-terminal affinity-tag

<223> Synthetic construct

<400> 31

His His His His His His Ser Ser Gly Leu Val Pro Arg Gly Ser Gly
1 5 10 15

Met Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
20 25 30

Pro Asp Leu Gly Thr Asp Asp Asp Asp Lys Ala Met Gly Ser Gly Thr
35 40 45

Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser Thr Asn Phe
50 55 60

Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln Val Tyr Thr
65 70 75 80

Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys Cys Phe Tyr
85 90 95

Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val Lys Asp Val
100 105 110

Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala Gly Asn Val
115 120 125

Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn Ser Pro Glu
130 135 140

Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr Ile Gln Ser
145 150 155 160

Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu Asp Glu Arg
165 170 175

Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg Asp Val Phe
180 185 190

Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser Ser Ser Ser
195 200 205

Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu Ile Asp Val
210 215 220

Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val Ile Pro Ser
225 230 235 240

Arg Thr Val Asn Arg Lys Ser Thr Asp Ser Pro Val Glu Cys Met Gly
245 250 255

Gln Glu Lys Gly Glu Phe Arg Gly Arg Gly Asp Ser Asp

260

265

<210> 32

<211> 270

<212> PRT

<213> Artificial

<220>

<221> Amino acid sequence of tTF-GNGRAHA having an N-terminal affinity-tag

<223> Synthetic construct

<400> 32

His His His His His Ser Ser Gly Leu Val Pro Arg Gly Ser Gly
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Met Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp Ser
 20 25 30

Pro Asp Leu Gly Thr Asp Asp Asp Asp Lys Ala Met Gly Ser Gly Thr
 35 40 45

Thr Asn Thr Val Ala Ala Tyr Asn Leu Thr Trp Lys Ser Thr Asn Phe
 50 55 60

Lys Thr Ile Leu Glu Trp Glu Pro Lys Pro Val Asn Gln Val Tyr Thr
 65 70 75 80

Val Gln Ile Ser Thr Lys Ser Gly Asp Trp Lys Ser Lys Cys Phe Tyr
 85 90 95

Thr Thr Asp Thr Glu Cys Asp Leu Thr Asp Glu Ile Val Lys Asp Val
 100 105 110

Lys Gln Thr Tyr Leu Ala Arg Val Phe Ser Tyr Pro Ala Gly Asn Val
 115 120 125

Glu Ser Thr Gly Ser Ala Gly Glu Pro Leu Tyr Glu Asn Ser Pro Glu
 130 135 140

Phe Thr Pro Tyr Leu Glu Thr Asn Leu Gly Gln Pro Thr Ile Gln Ser
 145 150 155 160

Phe Glu Gln Val Gly Thr Lys Val Asn Val Thr Val Glu Asp Glu Arg
 165 170 175

Thr Leu Val Arg Arg Asn Asn Thr Phe Leu Ser Leu Arg Asp Val Phe
 180 185 190

Gly Lys Asp Leu Ile Tyr Thr Leu Tyr Tyr Trp Lys Ser Ser Ser Ser
 195 200 205

Gly Lys Lys Thr Ala Lys Thr Asn Thr Asn Glu Phe Leu Ile Asp Val
 210 215 220

Asp Lys Gly Glu Asn Tyr Cys Phe Ser Val Gln Ala Val Ile Pro Ser

225		230		235		240									
Arg	Thr	Val	Asn	Arg	Lys	Ser	Thr	Asp	Ser	Pro	Val	Glu	Cys	Met	Gly
				245					250					255	

Gln	Glu	Lys	Gly	Glu	Phe	Arg	Gly	Asn	Gly	Arg	Ala	His	Ala
			260					265					270

<210> 33
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<220>
 <223> Synthetic construct

<400> 33

Gly	Arg	Gly	Asp	Ser	Pro
1				5	

<210> 34
 <211> 7
 <212> PRT
 <213> Artificial

<220>
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<400> 34

Gly	Asn	Gly	Arg	Ala	His	Ala
1				5		

<210> 35
 <211> 10
 <212> PRT
 <213> Artificial

<220>
 <223> Synthetic construct

<400> 35

Gly	Ala	Leu	Asn	Gly	Arg	Ser	His	Ala	Gly
1				5					10

<210> 36
 <211> 7
 <212> PRT
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<220>

<221> Cyclic
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<400> 36

Gly Cys Asn Gly Arg Cys Gly
1 5

<210> 37
<211> 14
<212> PRT
<213> Artificial

<220>
<221> Cyclic
<223> Synthetic construct

<400> 37

Gly Cys Asn Gly Arg Cys Val Ser Gly Cys Ala Gly Arg Cys
1 5 10

<210> 38
<211> 10
<212> PRT
<213> Artificial

<220>
<221> Cyclic
<223> Synthetic construct

<400> 38

Gly Cys Val Leu Asn Gly Arg Met Glu Cys
1 5 10

<210> 39
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Synthetic Construct

<400> 39

Thr Ala Ala Ser Gly Val Arg Ser Met His
1 5 10

<210> 40
<211> 10
<212> PRT

<213> Artificial

<220>

<223> Synthetic Construct

<400> 40

Leu	Thr	Leu	Arg	Trp	Val	Gly	Leu	Met	Ser
1				5					10

<210> 41

<211> 8

<212> PRT

<213> Artificial

<220>

<223> Synthetic construct

<400> 41

Thr	Thr	His	Trp	Gly	Phe	Thr	Leu
1				5			